Virginia Volunteer Monitoring Database- Help File

Version 1.00 (August 13, 2008)

The Virginia Department of Water Quality (DEQ) is compiling citizen water monitoring data into a database that be accessed from the web to store, update, and review monitoring records. This database is flexible, and includes

- **physical characteristics** (metadata) of monitoring sites
- any monitoring **parameters** and associated **protocol** metadata
- associated quality-assurance validation **rules** for each parameter
- flexible **reporting** and **charting** of data
- data **export** for other applications
- **import** data in spreadsheet/XML format

The Virginia DEQ, in partnership with the Environmental Alliance for Senior Involvement (EASI) developed this web accessible database based off of EASI's "MonitorAnything" application initially developed in 1997 in partnership with the Pennsylvania Department of Environmental Protection.

With this application, users can access a wide range of water quality monitoring data. Monitoring data available on this website was submitted to DEQ from the following types of monitoring organizations:

- Citizen volunteer monitors
- Non-DEQ government agencies
- Colleges and universities
- Private industries and businesses

For water quality monitoring data collected by DEQ, please visit the website http://gisweb.deq.virginia.gov

Notice: Data contained in this website was submitted by non-DEQ organizations for DEQ and the public's use. Although DEQ regularly screens submitted data for quality assurance, DEQ does not guarantee the accuracy of any data displayed on or downloaded from this site.

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

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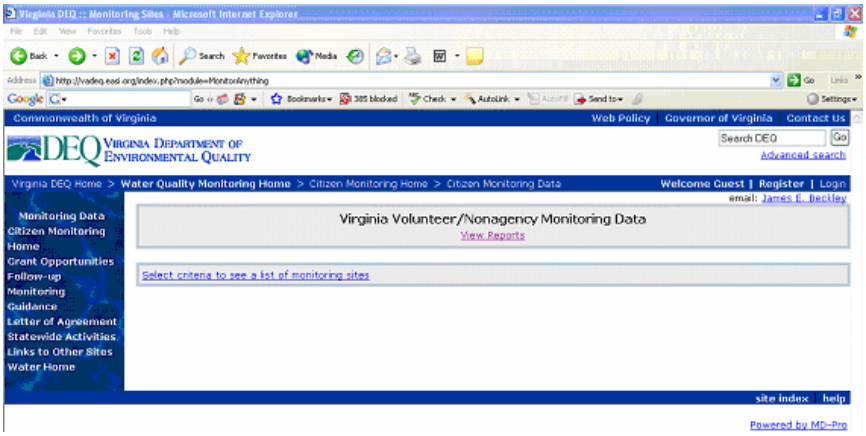
Section 1: General User Guide

This section of the help file contains an overview of the options and features of the database to unregistered users. The site allows unregistered users to view and download monitoring data from registered organizations which have uploaded water quality data to the site.

Note: Registered users have access to the same features outlined below in addition to creating new sample sites, editing, and uploading of monitoring data, and similar functions. To learn more about registered user capabilities, please see Section 2 (page 12).

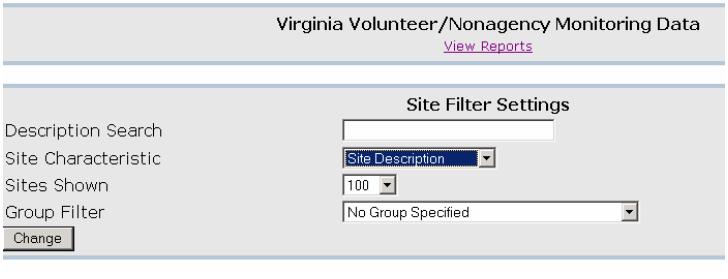
1.1: Entering the Database

Go to the Virginia Department of Environmental Quality citizen monitoring website (www.deq.virginia.gov/cmonitor) and click on the link **DEQ Non-Agency Database**. Once you enter the site, you will see the following page.



Click on '**Select criteria to see a list of monitoring sites'** to enter the site. If you do not see the page shown above, click on **Monitoring Data** link found on the left hand side of the page.

Once there, users will see a menu asking users to select monitoring sites using different options.



A. **Description Search**: Used in conjunction with the **Site Characteristic** tool. This field is case sensitive. For example if searching for sites located in Fairfax County, type the word **Fairfax** instead of **fairfax** or **FAIRFAX**.

B. **Site Characteristic**: This dropdown menu allows users to select monitoring sites by one of the following criteria:

   1. Hydrologic Unit Code or HUC (additional information about HUC's is available at http://www.dcr.virginia.gov/soil_&_water/hu.shtml).

   2. County or City name

3. By DEQ regional office, (additional information about DEQ regional offices is available at www.deq.virginia.gov/regions). If searching by regional offices, use one of the following values **NRO**, **PRO**, **SCRO**, **SWRO**, **TRO**, **VRO**, or **WCRO**.

C. **Sites Shown**: This dropdown menu allows users to view the number of monitoring sites in your query. The current setting is 50, 100, 200, 500, and 1000.

D. **Group Filter**: A drop down menu to select monitoring sites according to monitoring group. This is the best way to drill down to data generated by a specific organization.

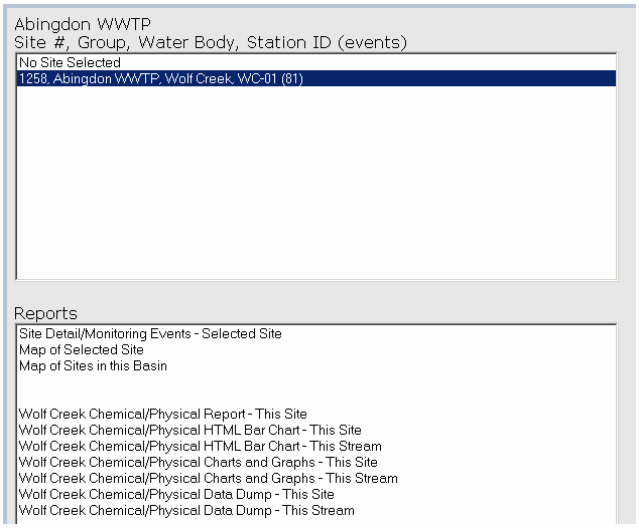
E. **Change**: After making the necessary selections, click on this button to run the query.

Note: It is possible to use multiple fields to drill to very specific information. For example, a user wishes to view the monitoring results collected by the Alliance for the Chesapeake Bay in King and Queen County.

To do this search, type in ***King and Queen*** under the **Description Search** field, select **City or County** under the **Site Characteristic** field, and finally select ***Alliance for the Chesapeake Bay*** under the **Group Filter** field.

1.2: Viewing Online Reports and Charts

Once a user has selected the data they are interested in, they will see a screen similar to the one below.



This screen is known as the **View Reports** page and is the default view for navigating the database. The top window displays the sites available for viewing. Using the example below, this list of sites contains the following five pieces of information:

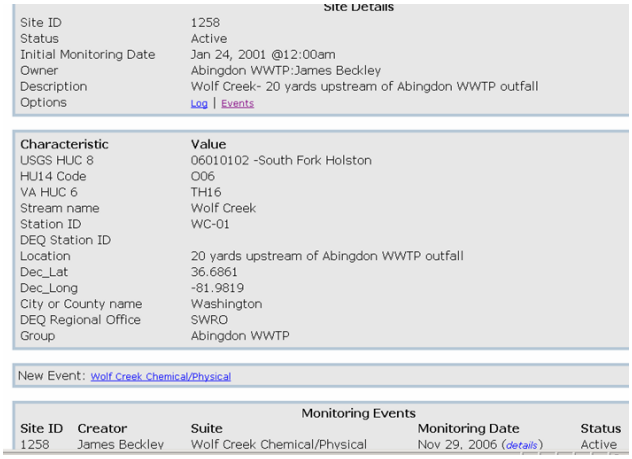
1	**2**	**3**	**4**	**5**
1258	Abingdon WWTP	Wolf Creek	WC-01	(81)

1. **Database Site ID**: Identification number assigned to a monitoring site by the database for tracking purposes.
2. **Monitoring Group**: Name of the monitoring organization.
3. **Waterbody Name**: Name of the waterbody being monitored
4. **Monitoring Group Site ID**: Site identification value assigned by the monitoring group.
5. **Number of Observations**: Number of sample events available for download.

In the bottom window, there are several options available to view different types of data and reports. More information about these options is explained on the following pages.

Site Detail/Monitoring Events

This option is useful to learn about the details of a particular monitoring site such as latitude and longitude, along with an option to select individual sampling results. To assess this feature, select a monitoring site of interest along with the option **Site Detail/Monitoring Events-selected site** and click on the **GO** button. A new report will be generated looking like the images below



Site Details

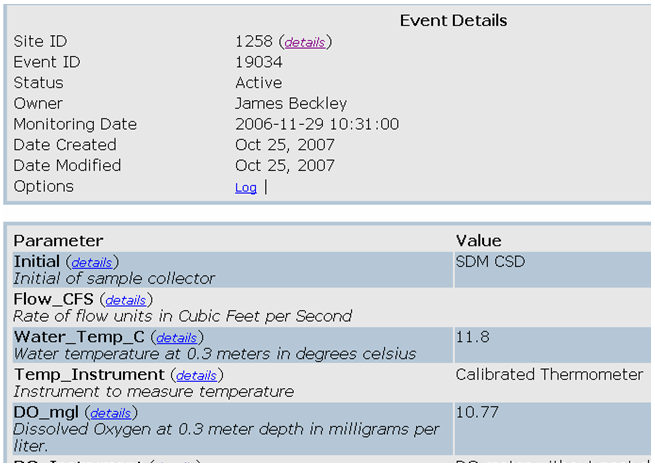
Site ID	1258
Status	Active
Initial Monitoring Date	Jan 24, 2001 @12:00am
Owner	Abingdon WWTP:James Beckley
Description	Wolf Creek- 20 yards upstream of Abingdon WWTP outfall
Options	Log | Events

Characteristic	Value
USGS HUC 8	06010102 -South Fork Holston
HU14 Code	O06
VA HUC 6	TH16
Stream name	Wolf Creek
Station ID	WC-01
DEQ Station ID	
Location	20 yards upstream of Abingdon WWTP outfall
Dec_Lat	36.6861
Dec_Long	-81.9819
City or County name	Washington
DEQ Regional Office	SWRO
Group	Abingdon WWTP

New Event: Wolf Creek Chemical/Physical

Monitoring Events

Site ID	Creator	Suite	Monitoring Date	Status
1258	James Beckley	Wolf Creek Chemical/Physical	Nov 29, 2006 (details)	Active



Event Details

Site ID	1258 (details)
Event ID	19034
Status	Active
Owner	James Beckley
Monitoring Date	2006-11-29 10:31:00
Date Created	Oct 25, 2007
Date Modified	Oct 25, 2007
Options	Log |

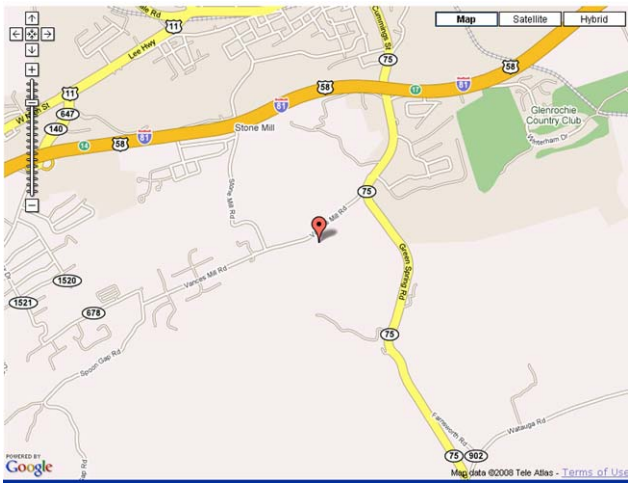
Parameter	Value
Initial (details) *Initial of sample collector*	SDM CSD
Flow_CFS (details) *Rate of flow units in Cubic Feet per Second*	
Water_Temp_C (details) *Water temperature at 0.3 meters in degrees celsius*	11.8
Temp_Instrument (details) *Instrument to measure temperature*	Calibrated Thermometer
DO_mgl (details) *Dissolved Oxygen at 0.3 meter depth in milligrams per liter.*	10.77

This report shows an individual monitoring site's characteristics, and lists the monitoring events for that site. Each monitoring event listed shows the monitoring date and the suite used for monitoring.

Click on the **details** link for a monitoring event to see all information for that event.

Online Mapping Feature

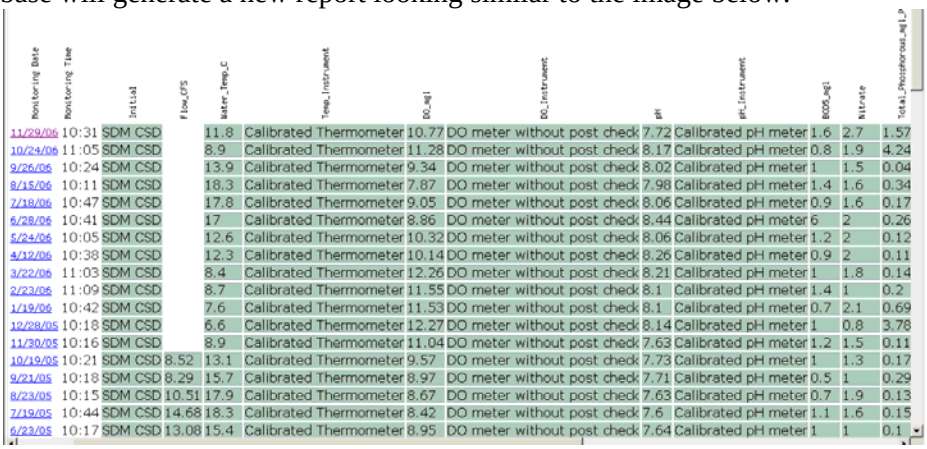
The database provides a convenient mapping feature using Google Maps to display locations of sampling sites. To select this option, go to the **View Reports** page. Select a monitoring site of interest then select **Map of Selected Site** (for individual sites) or **Map of Sites in the Basin (**all sites in a watershed), and then click on the **GO** button.



A new page will load showing the location of the sample site(s). Users are able to pan, zoom in, and zoom out to view the site. In addition, by clicking on the red flag icon, the website will display some information about the monitoring site. Finally, the map also provides satellite images of the area. Currently Northern Virginia, Tidewater, City of Richmond, and similar locations have high quality images available.

Site Report

The **Site Report** feature provides a way to view the results from a particular monitoring site online without having to export the data to Excel or similar applications. To assess this feature, go to the **View Reports** main page. Select the monitoring site of interest, select **[Suite Name] Report-This Site** and then click on the **GO** button. The database will generate a new report looking similar to the image below.



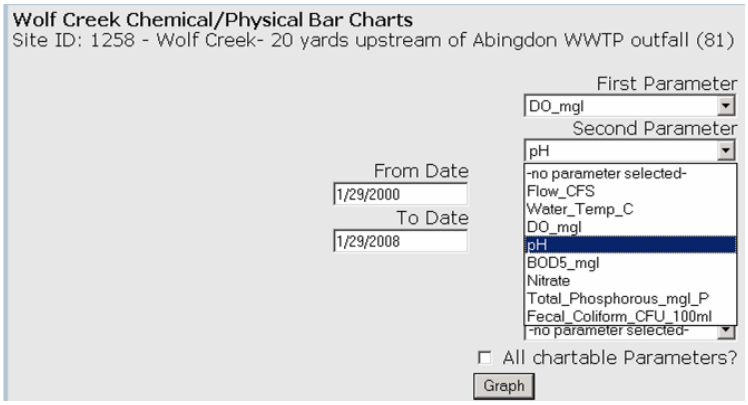
Monitoring Date	Monitoring Time	Initial	Flow_CFS	Water_Temp_C	Temp_Instrument	DO_mgl	DO_Instrument	pH	pH_Instrument	BOD5_mgl	Nitrate	Total_Phosphorous_mgl_P
11/29/06	10:31	SDM CSD		11.8	Calibrated Thermometer	10.77	DO meter without post check	7.72	Calibrated pH meter	1.6	2.7	1.57
10/24/06	11:05	SDM CSD		8.9	Calibrated Thermometer	11.28	DO meter without post check	8.17	Calibrated pH meter	0.8	1.9	4.24
9/26/06	10:24	SDM CSD		13.9	Calibrated Thermometer	9.34	DO meter without post check	8.02	Calibrated pH meter	1	1.5	0.04
8/15/06	10:11	SDM CSD		18.3	Calibrated Thermometer	7.87	DO meter without post check	7.98	Calibrated pH meter	1.4	1.6	0.34
7/18/06	10:47	SDM CSD		17.8	Calibrated Thermometer	9.05	DO meter without post check	8.06	Calibrated pH meter	0.9	1.6	0.17
6/28/06	10:41	SDM CSD		17	Calibrated Thermometer	8.86	DO meter without post check	8.44	Calibrated pH meter	6	2	0.26
5/24/06	10:05	SDM CSD		12.6	Calibrated Thermometer	10.32	DO meter without post check	8.06	Calibrated pH meter	1.2	2	0.12
4/12/06	10:38	SDM CSD		12.3	Calibrated Thermometer	10.14	DO meter without post check	8.26	Calibrated pH meter	0.9	2	0.11
3/22/06	11:03	SDM CSD		8.4	Calibrated Thermometer	12.26	DO meter without post check	8.21	Calibrated pH meter	1	1.8	0.14
2/23/06	11:09	SDM CSD		8.7	Calibrated Thermometer	11.55	DO meter without post check	8.1	Calibrated pH meter	1.4	1	0.2
1/19/06	10:42	SDM CSD		7.6	Calibrated Thermometer	11.53	DO meter without post check	8.1	Calibrated pH meter	0.7	2.1	0.69
12/28/05	10:18	SDM CSD		6.6	Calibrated Thermometer	12.27	DO meter without post check	8.14	Calibrated pH meter	1	0.8	3.78
11/30/05	10:16	SDM CSD		8.9	Calibrated Thermometer	11.04	DO meter without post check	7.63	Calibrated pH meter	1.2	1.5	0.11
10/19/05	10:21	SDM CSD	8.52	13.1	Calibrated Thermometer	9.57	DO meter without post check	7.73	Calibrated pH meter	1	1.3	0.17
9/21/05	10:18	SDM CSD	8.29	15.7	Calibrated Thermometer	8.97	DO meter without post check	7.71	Calibrated pH meter	0.5	1	0.29
8/23/05	10:15	SDM CSD	10.51	17.9	Calibrated Thermometer	8.67	DO meter without post check	7.63	Calibrated pH meter	0.7	1.9	0.13
7/19/05	10:44	SDM CSD	14.68	18.3	Calibrated Thermometer	8.42	DO meter without post check	7.6	Calibrated pH meter	1.1	1.6	0.15
6/23/05	10:17	SDM CSD	13.08	15.4	Calibrated Thermometer	8.95	DO meter without post check	7.64	Calibrated pH meter	1	1	0.1

This report displays monitoring results form the selected site in chronological order with the most recent observations at the top of the chart. Sometimes users will note that some of the results are shaded red. This indicates that the results are outside expected parameters and is used to help notify data submitters to make sure the values are correct.

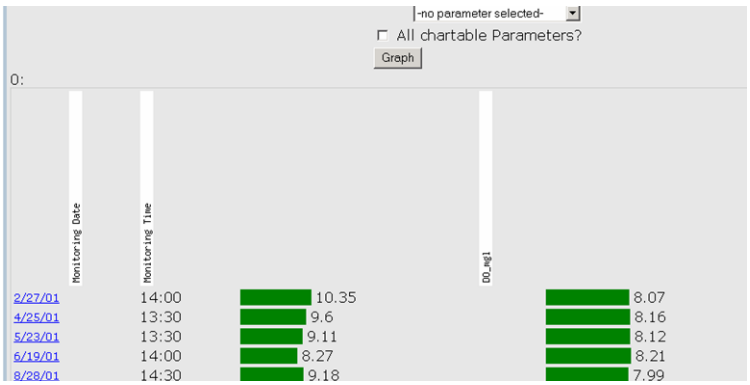
Charts and Graphs

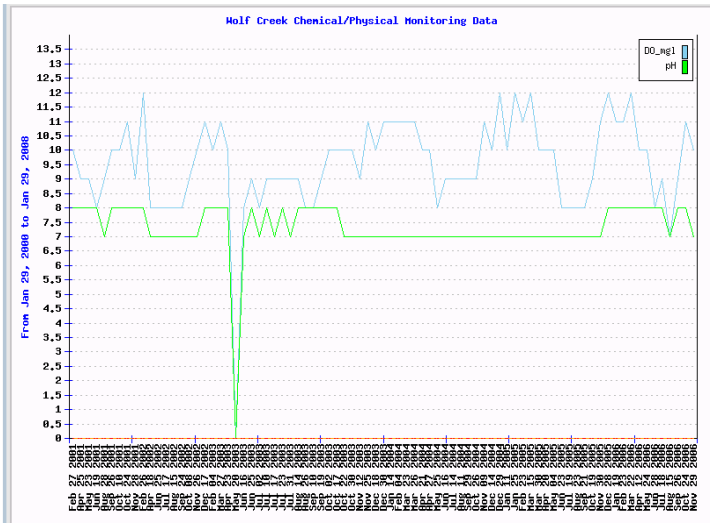
Another useful reporting feature is two types of charting applications. From the **View Reports** screen, select the monitoring site of interest and then either **HTML Bar Chart** or **Charts and Graphs** and click **GO**.

From either the **HTML Bar Chart** or **Charts and Graphs** page, select a date range and up to six monitoring parameters to graph.



The **HTML Bar Chart** option provides a simple way to visualize the differences in monitoring results.





The **Chart and Graphs** page provides a traditional charting ability to track trends in water quality parameters over time. There are nine different types of charts available for displaying (bar, line, pie, etc.). Users can also export the chart as a jpeg image to save on their computer for later reference.

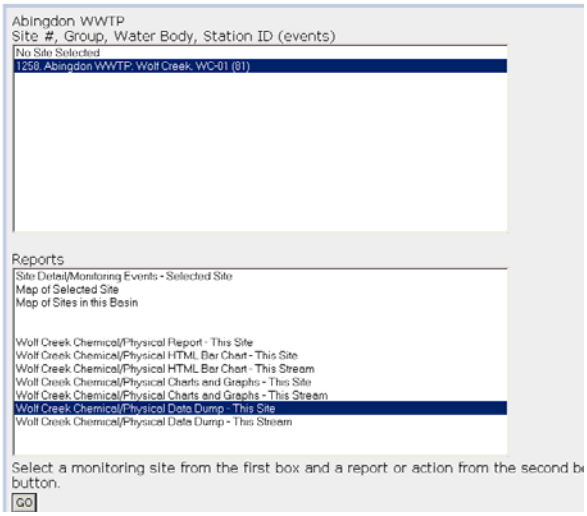
Note: for the **Chart and Graphs** page, the X and Y axis may not display readable values if there are too many observations or if a user graphs parameters that compare a wide range of values (Example- viewing E. coli bacteria counts). If a chart does not display clearly, please download the monitoring data (see Section 1.3 below) and use a program like Excel that have graphing capabilities.

1.3: Downloading Data and other files

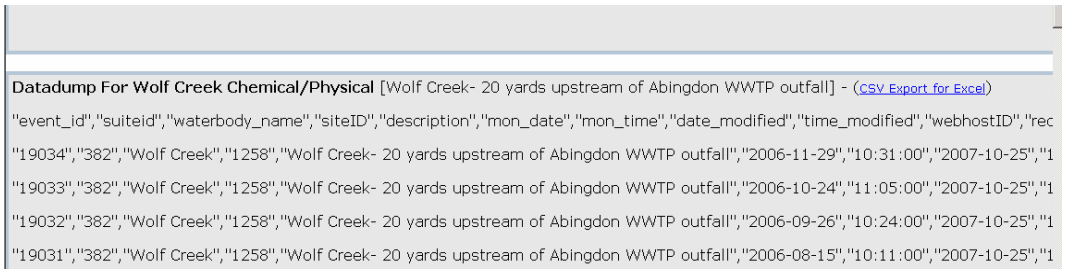
Data dumps: exporting data

Users may export site records via a **data dump** as a comma-separated values (**CSV**) text file that allows for importing to programs like Excel.

To perform a **data dump** go to the **View Reports** screen and select the monitoring site of interest. Then select **[Suite Name] Data Dump-This Site** (for one site) or **[Suite Name] Data Dump- This Stream** (for multiple sites in the same waterbody) and then click on the **GO** button.



The database will display a new screen showing the data in CSV format. To download the data, click on the hyperlink **CSV Export for Excel**. From there, users will see a prompt to save the file on their computer allowing programs like Excel or Access to display the data.



Datadump For Wolf Creek Chemical/Physical [Wolf Creek- 20 yards upstream of Abingdon WWTP outfall] - (CSV Export for Excel)

"event_id","suiteid","waterbody_name","siteID","description","mon_date","mon_time","date_modified","time_modified","webhostID","rec

"19034","382","Wolf Creek","1258","Wolf Creek- 20 yards upstream of Abingdon WWTP outfall","2006-11-29","10:31:00","2007-10-25","1

"19033","382","Wolf Creek","1258","Wolf Creek- 20 yards upstream of Abingdon WWTP outfall","2006-10-24","11:05:00","2007-10-25","1

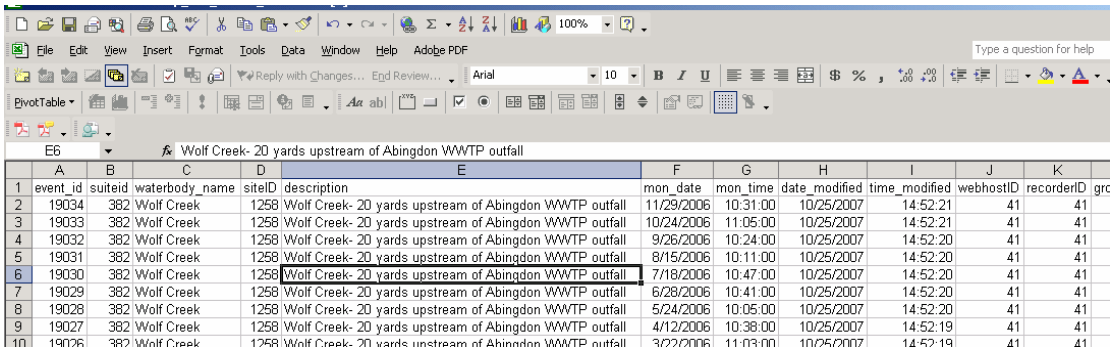
"19032","382","Wolf Creek","1258","Wolf Creek- 20 yards upstream of Abingdon WWTP outfall","2006-09-26","10:24:00","2007-10-25","1

"19031","382","Wolf Creek","1258","Wolf Creek- 20 yards upstream of Abingdon WWTP outfall","2006-08-15","10:11:00","2007-10-25","1

This data dump feature is useful for many reasons. Below are some key uses.

1. Export data into Excel or other programs for reporting or access more additional graphing capability.
2. Provide a centralized location for fellow monitors to download data from sample sites.
3. For registered users, provide a template to perform batch uploads of new monitoring data (explained in subsection 2.3).

Once the file opens in Excel or similar program, the displayed data should look something like the following:

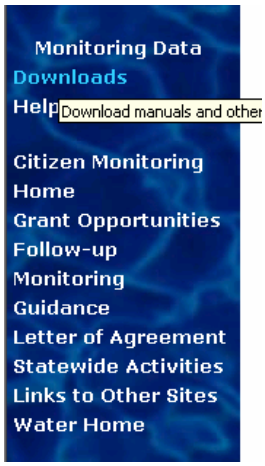


E6: Wolf Creek- 20 yards upstream of Abingdon WWTP outfall

	A	B	C	D	E	F	G	H	I	J	K
1	event_id	suiteid	waterbody_name	siteID	description	mon_date	mon_time	date_modified	time_modified	webhostID	recorderID
2	19034	382	Wolf Creek	1258	Wolf Creek- 20 yards upstream of Abingdon WWTP outfall	11/29/2006	10:31:00	10/25/2007	14:52:21	41	41
3	19033	382	Wolf Creek	1258	Wolf Creek- 20 yards upstream of Abingdon WWTP outfall	10/24/2006	11:05:00	10/25/2007	14:52:21	41	41
4	19032	382	Wolf Creek	1258	Wolf Creek- 20 yards upstream of Abingdon WWTP outfall	9/26/2006	10:24:00	10/25/2007	14:52:20	41	41
5	19031	382	Wolf Creek	1258	Wolf Creek- 20 yards upstream of Abingdon WWTP outfall	8/15/2006	10:11:00	10/25/2007	14:52:20	41	41
6	19030	382	Wolf Creek	1258	Wolf Creek- 20 yards upstream of Abingdon WWTP outfall	7/18/2006	10:47:00	10/25/2007	14:52:20	41	41
7	19029	382	Wolf Creek	1258	Wolf Creek- 20 yards upstream of Abingdon WWTP outfall	6/28/2006	10:41:00	10/25/2007	14:52:20	41	41
8	19028	382	Wolf Creek	1258	Wolf Creek- 20 yards upstream of Abingdon WWTP outfall	5/24/2006	10:05:00	10/25/2007	14:52:20	41	41
9	19027	382	Wolf Creek	1258	Wolf Creek- 20 yards upstream of Abingdon WWTP outfall	4/12/2006	10:38:00	10/25/2007	14:52:19	41	41
10	19026	382	Wolf Creek	1258	Wolf Creek- 20 yards upstream of Abingdon WWTP outfall	3/22/2006	11:03:00	10/25/2007	14:52:19	41	41

The first 11 of 13 columns (A-E and H-M in Excel) contain metadata used by the database and are not needed by most general users. The fields titled **mon_date** and **mon_time** (F-G in Excel) should be kept as they report the date and time that the monitoring took place. The next 12 columns (N-Y in Excel) contain metadata about the particular monitoring site including latitude/longitude, county, and similar information. Actual water quality data starts after this site metadata (column Z in Excel) and may contain up to 30 or more parameters depending on the monitoring group.

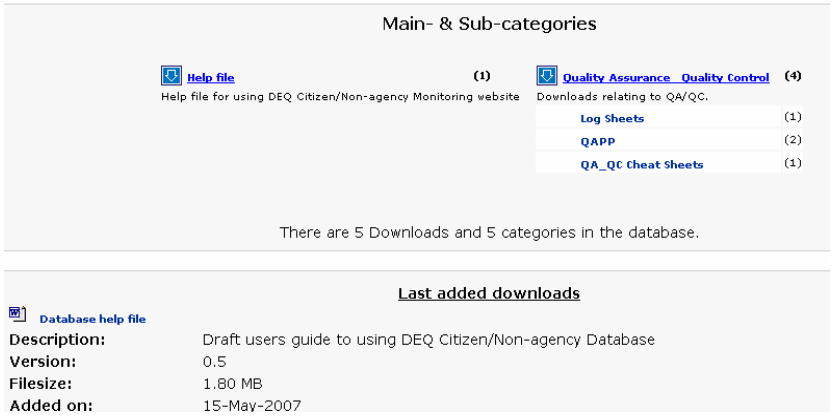
Downloads



On the left hand side of the database website, users will note the link titled **Downloads**

By clicking on this hyperlink, users will gain access to a page where various types of media are available for public use.

Downloaded files are in Microsoft Office formatted files (.doc, .xls, etc.), Adobe Acrobat (.pdf), or jpeg (.jpg) images. This page is set up to allow users to search for specific files or browse by categories such as Quality Assurance Project Plans (see screenshot on next page).



Registered members to the site may upload files for distribution. However, DEQ reserves the right to review and turn down submitted files. More information about uploading files is in Section 2.5.

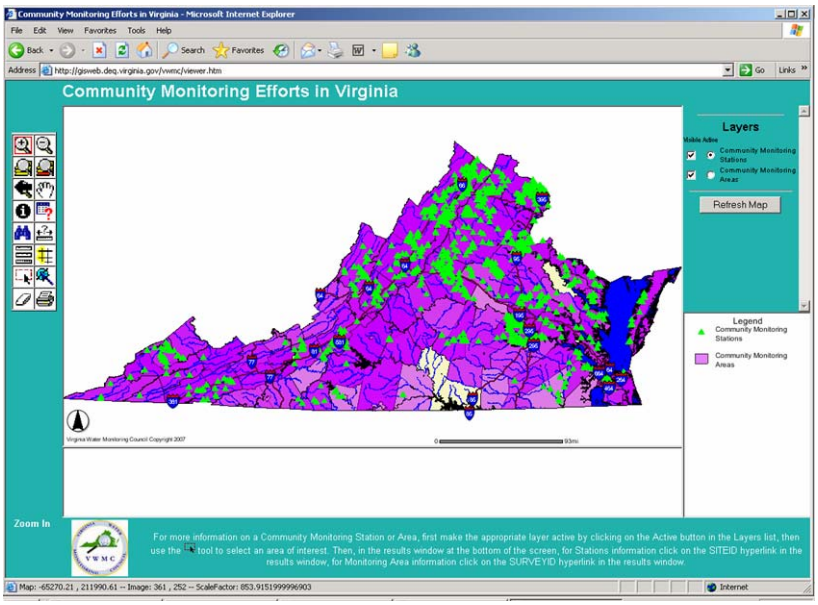
1.4 GIS Mapping Feature

In addition to the database, DEQ has a link to Geographic Information System (GIS) application that allows users the same level of access to monitoring data as explained above. This GIS service was the result of an ongoing partnership with DEQ and the Virginia Water Monitoring Council (VWMC) to allow the public to find contact information for water monitoring groups active in Virginia. This application was upgraded in the fall of 2007 to link with the database covered in this help file.

Note: DEQ performs occasional updates to the GIS map to display monitoring sites that are present in the database application; however, not all monitoring sites or contact information may be displayed.

Entering the GIS Site

To access the website, go to **http://gisweb.deq.virginia.gov** and click on the link **Community Monitoring Efforts** found on the left hand side of the webpage.



Selecting and Accessing Site Data

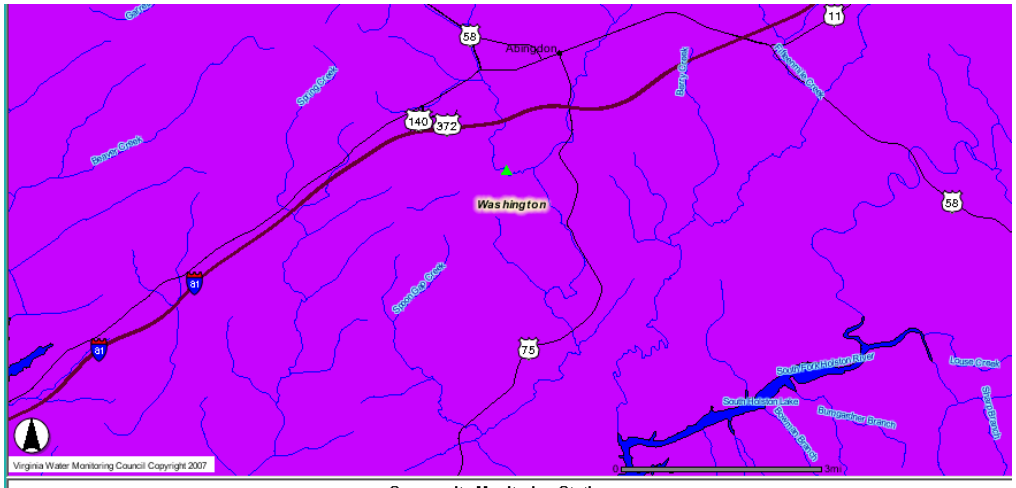
The default view allows users select monitoring sites (represented by green triangles) by using the toolbar found on the left hand side of the page. The four most useful tools for users are:

Zoom In- Allows users to click on the area of Virginia to zoom into

Zoom Out- Allows users to zoom out to look at larger areas of Virginia

Pan- By holding down the mouse button and dragging across, allows users to pan across Virginia to view sites or center the screen

Identify- This button must be selected in order to obtain information found on the map. To access monitoring sites, click on the green triangle representing the monitoring site.



Community Monitoring Stations

Rec	SUITEID	SITEID	DESCRIPTIO	GROUPID	STREAM_NAM	STATION_ID	DEQ_STATIO	
1	42	316	Wolf Creek- Wolf Creek 0.15 miles upstream of Route 794 and Route 670 intersection	14	Wolf Creek	WOLF1	6CWOL-SOS	Wolf Creek 0.15 miles upstream

After zooming in and identifying the site of interest, the user will see a table below the map providing basic information about the monitoring site selected.

By clicking on the **SITEID**, the user will see a screen displaying additional information along with the following links:

1. **Site Detail/Monitoring Events**- Link to the screen listing site and sample event information (see page 5)
2. **Monitoring Report**- Table displaying the monitoring results at the site (page 6)
3. **Bar Chart**- Charts displaying the water quality data from the site that is present in the database (page 6-7)
4. **Data Dump**- Allows downloading of monitoring data in .CSV format (page 7)

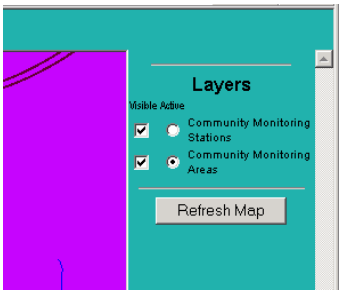
Virginia Water Monitoring Council
Citizen Monitoring Site

Station ID: WOLF1
Stream: Wolf Creek
Location: Wolf Creek 0.15 miles upstream of Route 794 and Route 670 intersection
City/County: Smyth
Monitoring Group: Holston River Water Quality Monitors

This group has submitted monitoring data to the Virginia Department of Environmental Quality. The following information is available for this station:

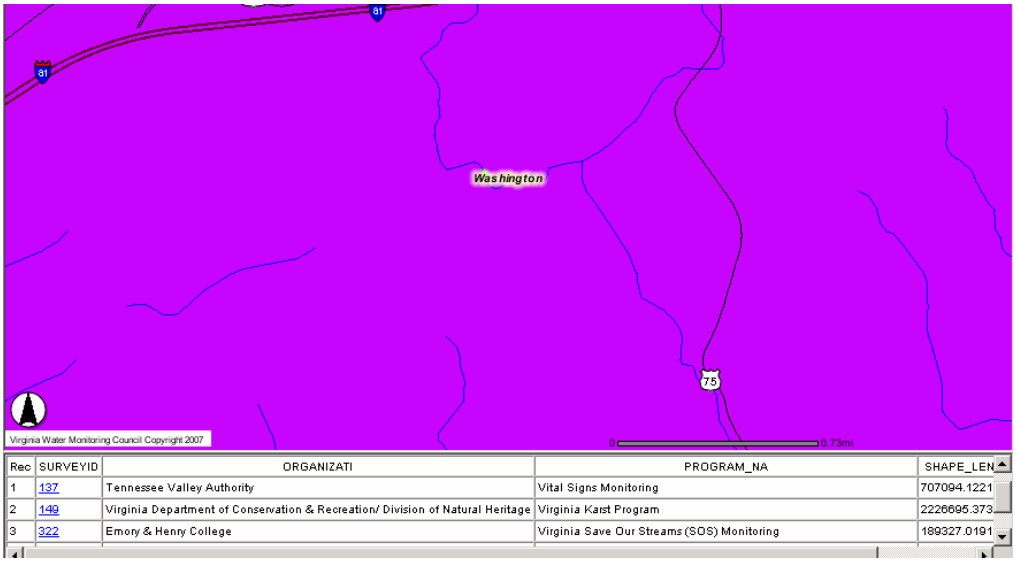
Site Detail/Monitoring Events
Monitoring Report
Bar Chart
Data Dump

Monitoring Group Contact Information



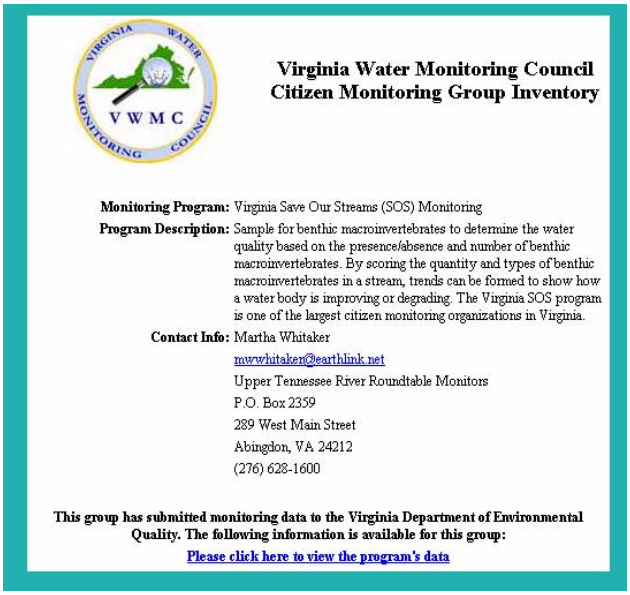
By selecting the layer **Community Monitoring Areas** in the upper right hand side of the page and clicking on Refresh Map, users can find contact information on monitoring organizations.

After the map refreshes, the user can then use the same mapping tools explained above. Users can use the 'identify' button to select one of the purple colored counties or cities. As with selecting monitoring sites, the user will see a table at the bottom of the map showing all of the known contact information present for each locality.



Rec	SURVEYID	ORGANIZATI	PROGRAM_NA	SHAPE_LEN
1	137	Tennessee Valley Authority	Vital Signs Monitoring	707094.1221
2	149	Virginia Department of Conservation & Recreation/ Division of Natural Heritage	Virginia Karst Program	2226695.373
3	322	Emory & Henry College	Virginia Save Our Streams (SOS) Monitoring	189327.0191

By clicking on a number under the **SURVEYID** column, the user will see a new screen showing the contact information of the monitoring group.



If the monitoring program has data present in the database, clicking the link at the bottom of the information table will open a window displaying monitoring data collected by the group.

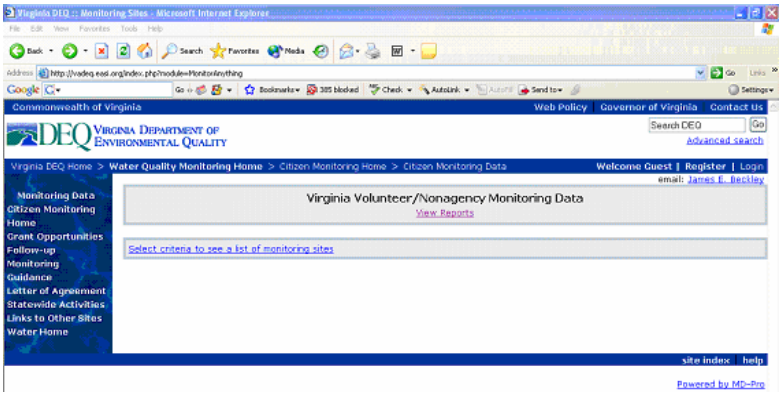
Section 2: Registered User Guide

This chapter contains an overview of the options and features of the database available to users who register on this site. Many of the features available to registered users are the same as outlined in Section 1. Section 2 focuses on features and items available only to registered users.

Note: For most monitoring groups, only one registered user is necessary in order to use the capabilities explained below. Other monitors active in the groups can view their data by following the instructions explained in Section 1.

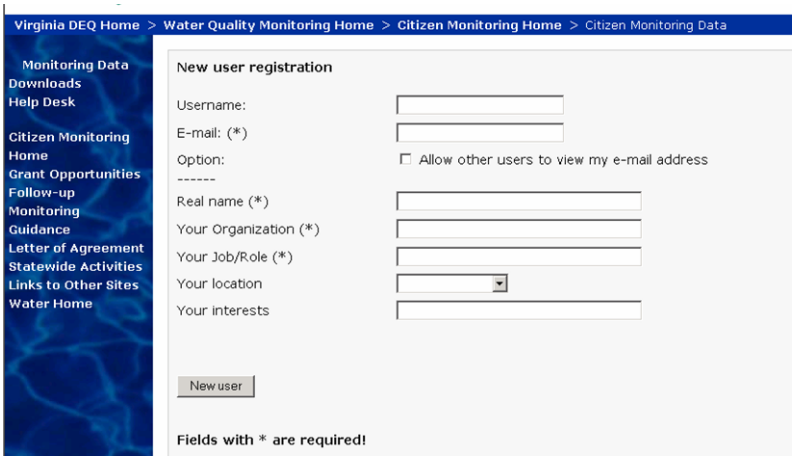
2.1: Logging In

Go to the Virginia Department of Environmental Quality citizen monitoring website (www.deq.virginia.gov/cmonitor) and click on the link **DEQ Non-Agency Database**. Users should see the following screen.



New users must register before they are able to log on to the site. To register, click on the **Register** link found on the upper right hand side of the page. New users should then see the page displayed below.

The fields marked with an asterisk (*) are required. For the Job/Role question, please type in the role in the monitoring group (QA Officer, Team Leader, etc.) Once the form is completed and submitted, DEQ will review the request. If approved, the user will receive a password at the provided E-mail address.

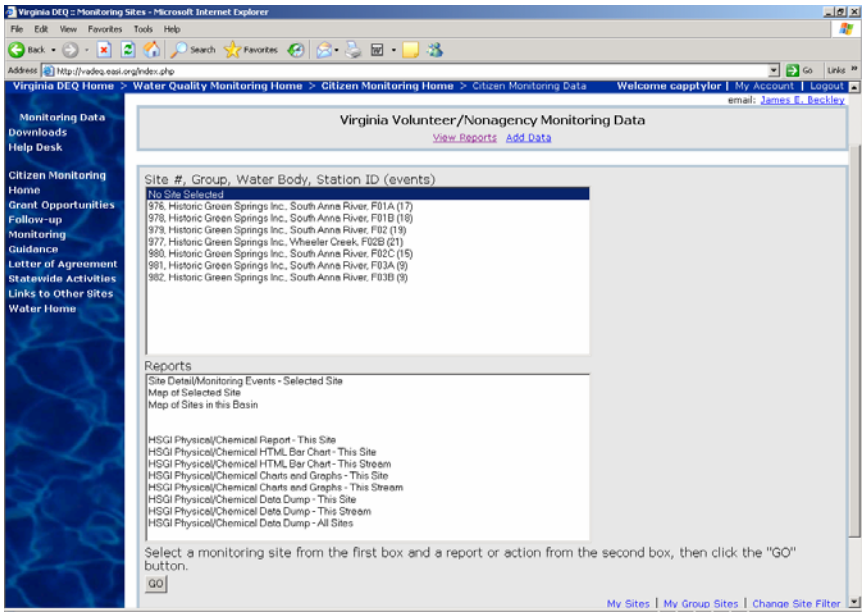


Note: Volunteers who submit data to large monitoring organizations such as the Friends of the Shenandoah River and Virginia Save our Streams may not need to register. Please contact your monitoring organization to see if they are submitting data to this website.

Once a password is received, users can login by using the **Login** link at the top right of the page. Simply type your **User ID** and **Password**.

If a registered user is using their own personal computer, they may check the **Remember me** box on the login screen to avoid retyping their user ID and password the next time they visit this site. The site uses cookies to keep track of which computer is accessing the site. If a user deletes their cookies, the website will not remember the username or password and will require user to reenter their login information.

Once logged in, users will see a page similar to the one below. If users see their homepage (explained in 2.5), please click on the **Monitoring Data** link found on the left hand side of the page.

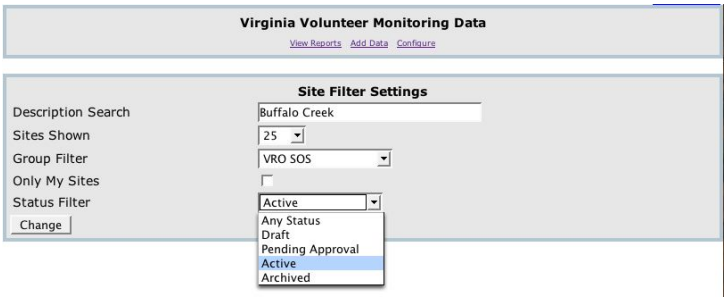


Note: If a registered user represents a new monitoring organization not currently listed on the database, DEQ will contact the user to request some information to help set up their monitoring account. Questions can be directed to the contact name given in the upper right hand corner of the webpage titled **E-mail:**

Selecting Sites

The default page shows sites for the monitoring group(s) that a user is registered under. At the bottom of the page, users will see the following links to change which sites are displayed.

Selecting **My Sites** shows sites for which the user created the original site record. Selecting **My Group Sites** shows sites that belong to groups of which a user is a member. Selecting **Change Site Filter** lets users view sites that match selection criteria you specify (explained in Section 1.1).



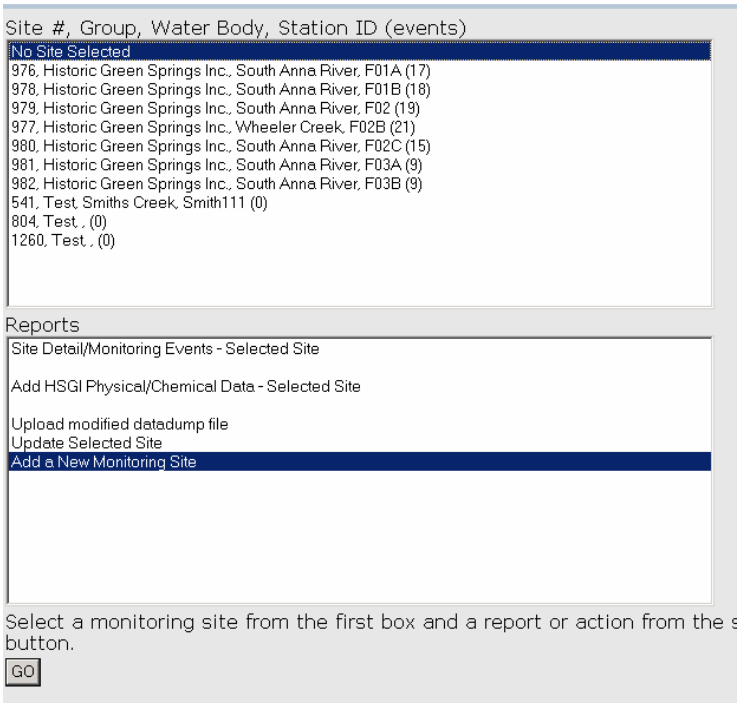
Registered users have the ability to select and view another group's published data as well as use other filter options to find sites that match specific characteristics.

2.2: Adding New Sample Sites

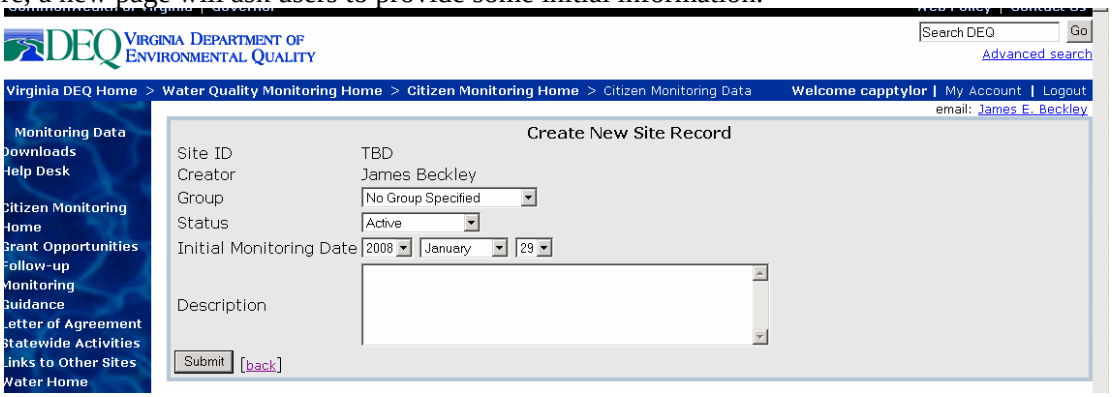
Adding a Single Site

Note: Each monitoring site record represents a unique location. If there are two or more different sites at the single location (For example: SOS site 1A and FOSR site 442 samples at the same bridge), they must be registered as separate sites to prevent confusion.

To add a single site, choose **Add Data** from the top menu. Select **Add a New Monitoring Site** from the Reports/Charts menu, finally click the **GO** button.



From there, a new page will ask users to provide some initial information.



1. **Site ID-** This is a numeric value assigned by the database to the new site for tracking purposes.

2. **Creator-** This is the name of the user adding the new monitoring site. The user logged in will have their name displayed as the station creator.

3. **Group-** Select the monitoring group to assign the site to. **Do not** register the site under the **No Group Specified** setting as this will not assign the site to the correct monitoring group. Registered users can only add sites to groups that they are members of.

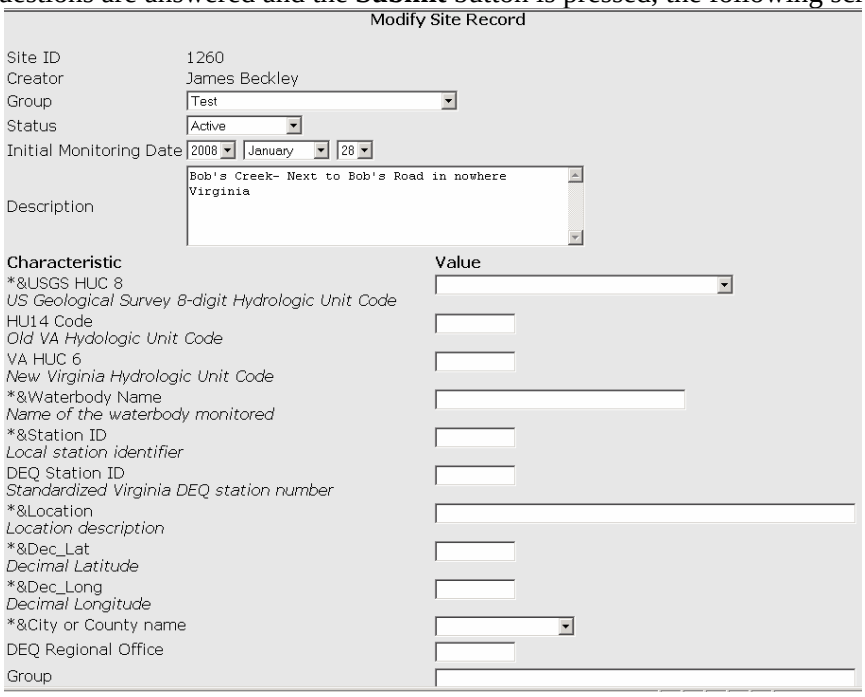
4. **Status**- The status of the monitoring site. Options include:
    A. **Draft-** Site will not appear on the public side of the database. Useful for awaiting correct latitude/longitude or similar information.
    B. **Pending Review-** A placeholder similar to **Draft** where the site is awaiting approval or review by the monitoring group or DEQ.
    C. **Active-** Site will appear on the public side of the database.
    D. **Archived-** Site is no longer active. This setting does not delete the site or the data. This feature allows users to retain information about the site in the event it is used again in the future.

5. **Initial Monitoring Date-** When sampling began or the earliest record available on the database.

6. **Description-** A unique description of the monitoring site. Most stations on the site use a combination of the name of the monitored waterbody and a brief geographic description.

    Example: Smith Creek- At Route 460 Bridge

Once these initial questions are answered and the **Submit** button is pressed, the following screen is displayed.



To finish registering a new site, fields marked with an asterisk (*) must be completed. In addition, other fields are available to help aid in finding the site using the search options explained in Section 1.1. Below is an explanation for each parameter.

***USGS HUC 8**- A required field. The site is set up with drop down buttons to allow users to select which basin that the site is located in. Additional information about HUC's is available at http://www.dcr.virginia.gov/soil_&_water/hu.shtml.

HU14 Code and VA HUC 16 Code- Optional fields designating which watershed the station is located in. A list of HU14 and VA HUC 16 codes is available in the **Download** portion of the database.

***Waterbody Name**- A required field. The name of the waterbody being monitored such as creeks, lakes, estuaries, etc.

***Station ID**- A required field. This is where monitoring groups place their own site identification value.

DEQ Station ID- DEQ designated ID to keep track of a sample site. DEQ will add this value later if needed.

***Location**- A required field that provides a brief narrative description to help locate the sample site. For example, "200 meters upstream of Route 460 Bridge" is a sufficient description.

***Dec_Lat** and ***Dec_Long**- Required latitude and longitude fields used to locate the sample site using a map. This information must use **Decimal Degrees** (Example: 38.4456, -78.4411). Websites like http://nationalmap.gov/ or GPS units can provide the required information in this format. DEQ can assist users in finding correct latitude and longitude coordinates.

***City or County Name-** A required field to help locate the site in the correct County or City in Virginia. This field has a drop down box to help aid in spelling.

Group Name- An optional field intended for large monitoring organizations like Virginia Save Our Streams. This allows large organizations to give credit to member groups who monitored at a specific site.

Adding Multiple Sites

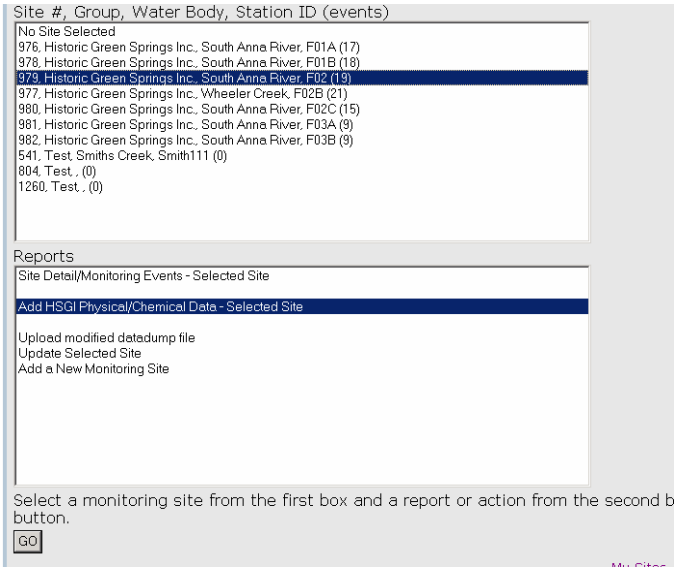
If a registered user wishes to add multiple sample sites, the database does have a way of performing batch uploads. However, please contact DEQ about how to perform batch uploading as it requires specialized instructions to prevent accidental duplication of monitoring sites and similar errors. To contact DEQ, please click on the **E-mail** link found on the upper right hand side of the page.

2.3: Adding New Sample Event Data

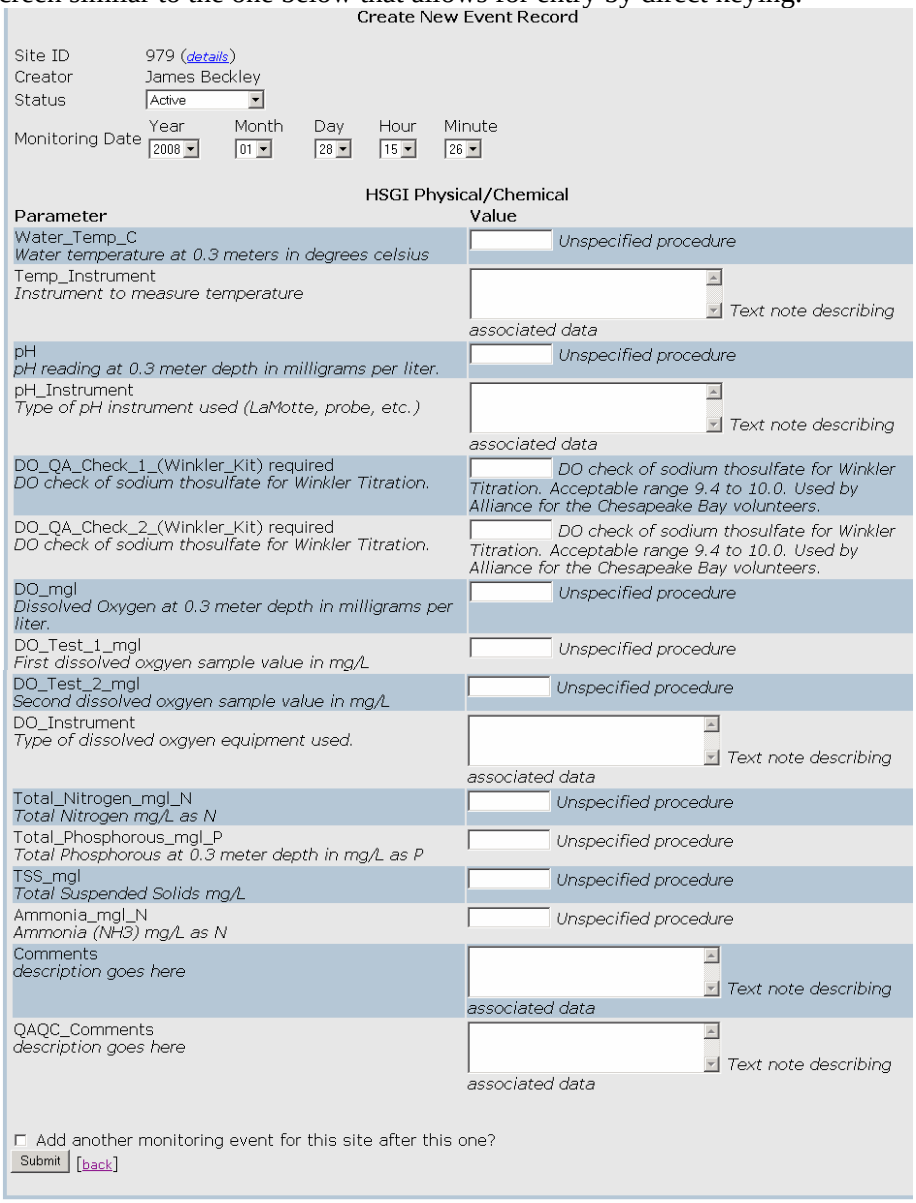
As with adding sample sites, users can upload new sample event data by direct keying or batch uploading.

Adding a Single Sample Event

After clicking on the **Add Data** screen, users can add a new monitoring event data by clicking on the site of interest, select **Add [Suite Name] Data- Selected Site** and then click on the **GO** button.



Users will see a screen similar to the one below that allows for entry by direct keying.



Create New Event Record

Site ID 979 (details)
Creator James Beckley
Status Active
Monitoring Date Year 2008 Month 01 Day 28 Hour 15 Minute 26

HSGI Physical/Chemical

Parameter	Value
Water_Temp_C *Water temperature at 0.3 meters in degrees celsius*	*Unspecified procedure*
Temp_Instrument *Instrument to measure temperature*	*Text note describing associated data*
pH *pH reading at 0.3 meter depth in milligrams per liter.*	*Unspecified procedure*
pH_Instrument *Type of pH instrument used (LaMotte, probe, etc.)*	*Text note describing associated data*
DO_QA_Check_1_(Winkler_Kit) required *DO check of sodium thosulfate for Winkler Titration.*	*DO check of sodium thosulfate for Winkler Titration. Acceptable range 9.4 to 10.0. Used by Alliance for the Chesapeake Bay volunteers.*
DO_QA_Check_2_(Winkler_Kit) required *DO check of sodium thosulfate for Winkler Titration.*	*DO check of sodium thosulfate for Winkler Titration. Acceptable range 9.4 to 10.0. Used by Alliance for the Chesapeake Bay volunteers.*
DO_mgl *Dissolved Oxygen at 0.3 meter depth in milligrams per liter.*	*Unspecified procedure*
DO_Test_1_mgl *First dissolved oxgyen sample value in mg/L*	*Unspecified procedure*
DO_Test_2_mgl *Second dissolved oxgyen sample value in mg/L*	*Unspecified procedure*
DO_Instrument *Type of dissolved oxgyen equipment used.*	*Text note describing associated data*
Total_Nitrogen_mgl_N *Total Nitrogen mg/L as N*	*Unspecified procedure*
Total_Phosphorous_mgl_P *Total Phosphorous at 0.3 meter depth in mg/L as P*	*Unspecified procedure*
TSS_mgl *Total Suspended Solids mg/L*	*Unspecified procedure*
Ammonia_mgl_N *Ammonia (NH3) mg/L as N*	*Unspecified procedure*
Comments *description goes here*	*Text note describing associated data*
QAQC_Comments *description goes here*	*Text note describing associated data*

Add another monitoring event for this site after this one?
Submit [back]

Note: 1. Users who do not know when the sample was collected, please use the value 1 hour and 00 minute. If users try to key in a value for midnight (24 hour and 00 minute), the database may misinterpret this entry and report that the sample was collected on a different date.

2. For data with zero (**0**) values such as rainfall amounts, use the text value **none**. This will prevent an issue where the database interprets **0** as having no value and not display on the site.

After filling in as much monitoring data available for the sample event, click on the **Submit** button at the bottom of a form to upload the information. Users should not fill in a field if there is no monitoring data. If users wish to key in data for multiple sample events collected at the same site, they may click on the check box just above the **Submit** button.

Adding data creates a new event or observation record using the parameters available to the group. By default, this submitted record is considered **Active** and is viewable to the public. Users may change the **Status** of a keyed event to **Draft** or **Archived**. This allows samplers to key in results for team leaders or quality assurance officers to check the results prior to publishing the data.

Adding Multiple Sample Events- Batch Uploading

Notice to New Users- DEQ asks groups who are performing their first batch upload to send a copy of the **data dump** file (explained below) that they wish to upload for review. This is to make sure the file is set up correctly prior to uploading. Please send this information using the **E-mail** address found at the upper right hand side of the page.

Note: Groups will need to have to have at least one sample event already registered for each sample site by following the steps outlined in **Adding a Single Sample Event** before proceeding.

1. To begin the process, perform a **data dump** of the sample data using instructions found in Section 1.3. Save this **data dump** in Comma Separate Value (.CSV) format. Excel and similar programs can open this file later. This saved **data dump** file will serve as a template to upload new data.

2. The first 25 columns contain metadata and not actual water quality data. Some of these columns are not needed. **The following columns are essential for batch uploading**. These fields are:

   event_id: Identification value for a specific sampling event. Each sample event recorded on the database has a numeric value to identify it. For new records, type or paste in the word **New** for each row that contains a new sample event.

   siteID: This is a unique value assigned by the database for sites registered on the database. This is **not** the designation given by a group to identify a site. To identify the correct **siteID** value for a particular sample site, cross reference using the **Station_ID** column explained below.

   suiteid: Database identifier for the protocols used by the group. For new records, the **suiteid** value should be the same number found in rows of the downloaded **data dump** file.

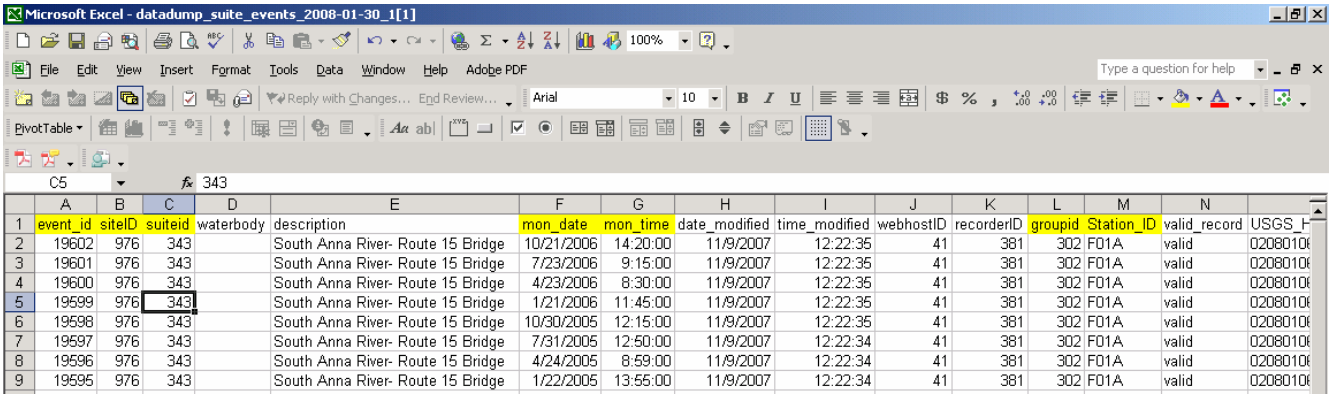
   mon_date: The date when monitoring occurred. The format of YYYY-MM-DD (2003-11-07 for November 7, 2003) is necessary for the database to recognize the date. Programs like Excel provide tools to change the date format under tools such as **Format Cells** or **Format Columns**.

   mon_time: The time that monitoring occurred. By recording the time, users as well as volunteer monitors can get a better understanding of how the time of day affects water quality. The format for time should be in military time hh:mm:ss (16:30:31 for 4:30:31 pm). Again, programs like Excel have tools to change the format for reporting time. If precise times are not available, this cell can be left blank.

   groupid: Unique value for the database to recognize a particular monitoring group. This number will not change from the **groupid** value seen in records downloaded using the **data dump** feature. Copy this number for new records you wish to upload.

   Station_ID: A number or value given by the monitoring group (Example: Site 1A). By keeping this field in place, users can sort data downloaded from the site using the data dump feature to find the correct **siteID** value to allow the database to sort newly uploaded data into the correct site.

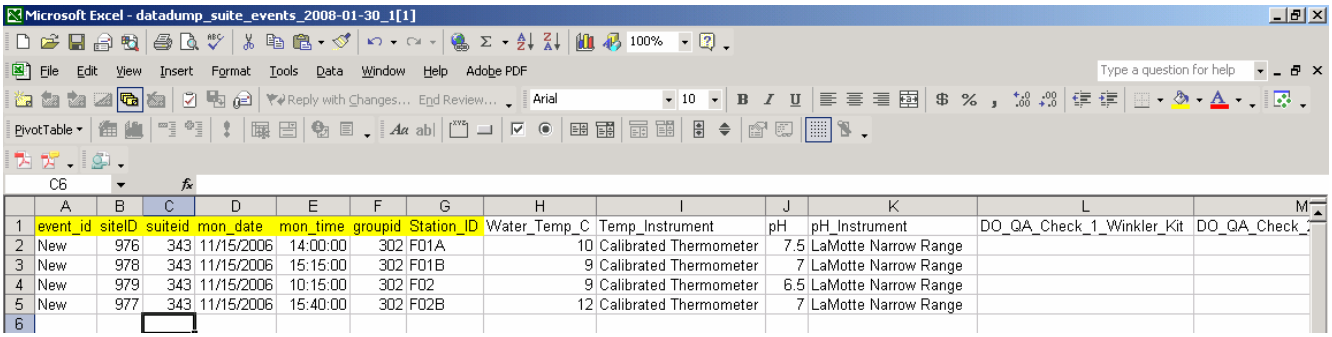
For steps 1 and 2, please see the example at the top of the next page to confirm the batch upload template matches the following screen images.



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
1	event_id	siteID	suiteid	waterbody	description	mon_date	mon_time	date_modified	time_modified	webhostID	recorderID	groupid	Station_ID	valid_record	USGS_H
2	19602	976	343		South Anna River- Route 15 Bridge	10/21/2006	14:20:00	11/9/2007	12:22:35	41	381	302	F01A	valid	0208010
3	19601	976	343		South Anna River- Route 15 Bridge	7/23/2006	9:15:00	11/9/2007	12:22:35	41	381	302	F01A	valid	0208010
4	19600	976	343		South Anna River- Route 15 Bridge	4/23/2006	8:30:00	11/9/2007	12:22:35	41	381	302	F01A	valid	0208010
5	19599	976	343		South Anna River- Route 15 Bridge	1/21/2006	11:45:00	11/9/2007	12:22:35	41	381	302	F01A	valid	0208010
6	19598	976	343		South Anna River- Route 15 Bridge	10/30/2005	12:15:00	11/9/2007	12:22:35	41	381	302	F01A	valid	0208010
7	19597	976	343		South Anna River- Route 15 Bridge	7/31/2005	12:50:00	11/9/2007	12:22:34	41	381	302	F01A	valid	0208010
8	19596	976	343		South Anna River- Route 15 Bridge	4/24/2005	8:59:00	11/9/2007	12:22:34	41	381	302	F01A	valid	0208010
9	19595	976	343		South Anna River- Route 15 Bridge	1/22/2005	13:55:00	11/9/2007	12:22:34	41	381	302	F01A	valid	0208010

The image above has highlights of the required fields needed to perform a successful upload. Users do not need the other fields not highlighted (except for the submitted water quality data). Users may also remove sample events that were in the downloaded **data dump** file to avoid updating records currently on the database.

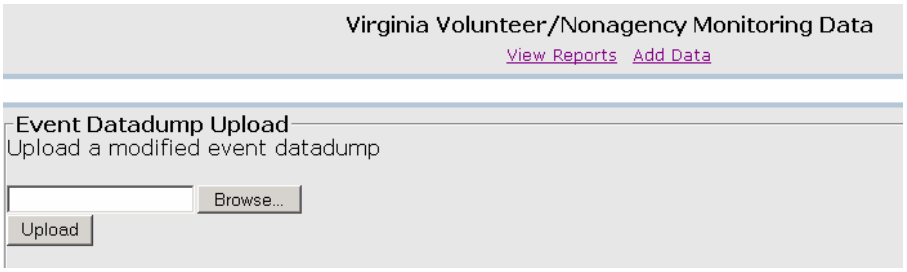
Remember, new sample event records should have the word **New** in the **event_id** field along with the correct **siteID** number to match the sample event to the correct site. Comparing the screen shot below with the image above can help explain this step.



	A	B	C	D	E	F	G	H	I	J	K	L	M
1	event_id	siteID	suiteid	mon_date	mon_time	groupid	Station_ID	Water_Temp_C	Temp_Instrument	pH	pH_Instrument	DO_QA_Check_1_Winkler_Kit	DO_QA_Check_2
2	New	976	343	11/15/2006	14:00:00	302	F01A	10	Calibrated Thermometer	7.5	LaMotte Narrow Range		
3	New	978	343	11/15/2006	15:15:00	302	F01B	9	Calibrated Thermometer	7	LaMotte Narrow Range		
4	New	979	343	11/15/2006	10:15:00	302	F02	9	Calibrated Thermometer	6.5	LaMotte Narrow Range		
5	New	977	343	11/15/2006	15:40:00	302	F02B	12	Calibrated Thermometer	7	LaMotte Narrow Range		
6													

3. Once the spreadsheet is ready to upload, save it on your computer's desktop and select the **Upload modified data dump file** link from the bottom menu on the **Add Data** page.

4. On the resulting page, use the **Event Datadump Upload** option by clicking on **browse**. Navigate to where the saved file is located and then click the **Upload** button.

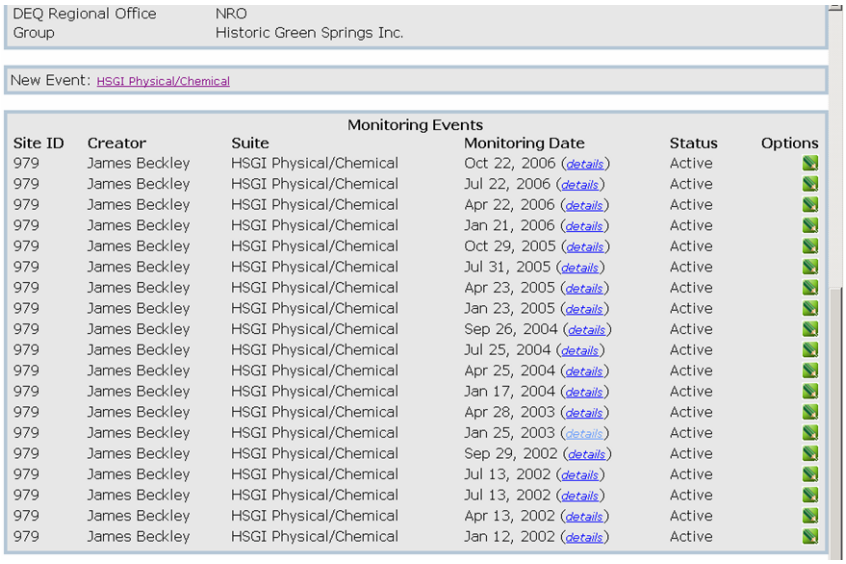


Depending on the speed of the internet connection and file size, a batch upload may take several minutes to complete. When the uploaded is completed, a screen will display that the data was uploaded successfully. If there is a problem performing the batch upload, please contact DEQ before attempting to upload the file again.

2.4: Updating/revising data

If a user discovers a mistake in previously entered data, there are tools available to correct the mistake.

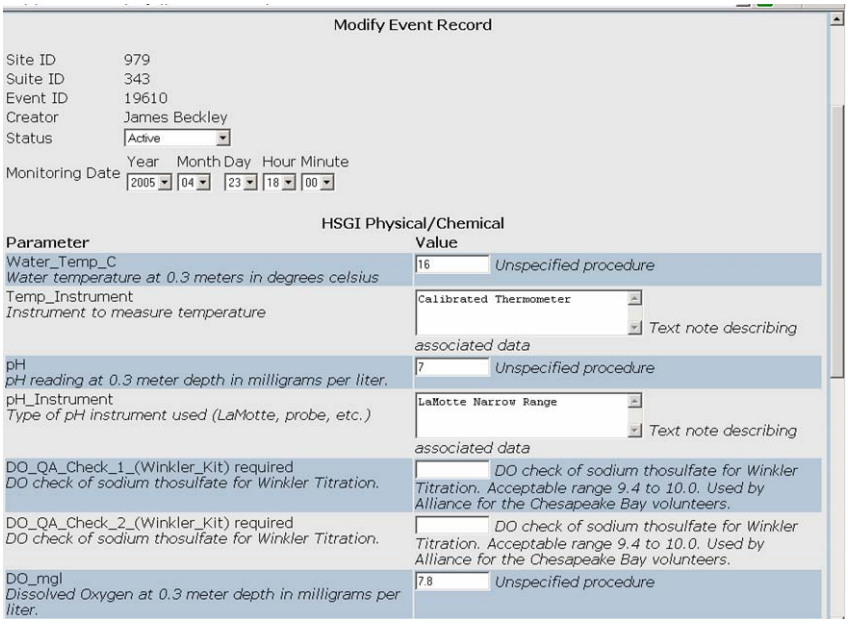
To edit a monitoring record, view the report for its site (**Site Detail/Monitoring Events – Selected Site)**. Select the event of interest from the list using **details** link.



While viewing the **site details** screen for the monitoring event, select the **Edit** option to change the existing data.

In addition, to this method, users can perform a **data dump** batch upload with the corrected files. To perform a batch upload, simply download the data, make the necessary corrections, and then perform a batch upload following the instructions listed at the end of Section 2.3.

Unlike adding new data, users should not need to change columns like **event_id**, **siteID**, or similar fields.

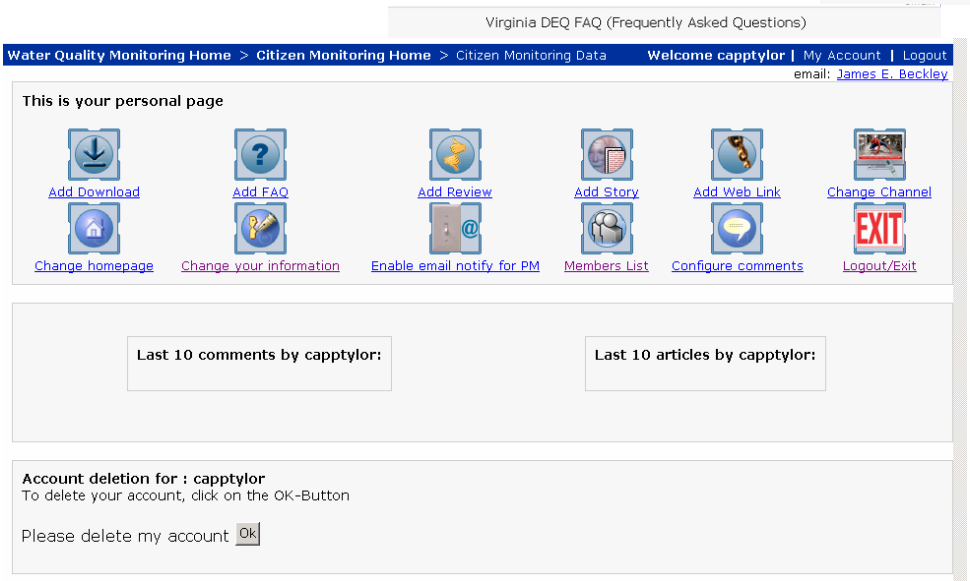


2.5: Other Options Available to Registered Users

Registered users have access to features to help personalize their account, submit files for downloading, access to the help desk, and other items outlined in this section.

User Homepage

When logged into the website, users can click on the link **My Account** found at the upper right hand side of the webpage.



This homepage has several features to help users personalize their accounts. Some of the buttons currently displayed are not active or fully developed. Below is a list of each feature currently active along with a brief explanation:

Add Download

By clicking on the link **Add Download,** users are able to upload files for the database. Please follow the onscreen instructions and complete each field. The database will accept the following file formats (.zip, .tar, .tgz, .jpg, .bmp, .gif, .pdf, .txt, .png, .xls, .doc, and .jpeg). The maximum file size is 2.00 MB.

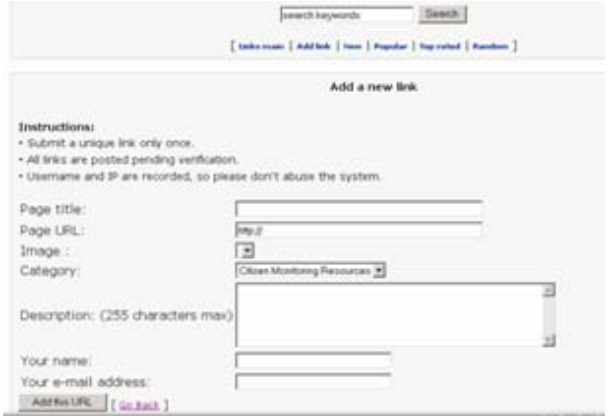
Note: DEQ will review all submitted downloads before allowing them to be available for public viewing. DEQ reserves the right to turn down any submitted file.

Change Your Information

As the name implies, by clicking on this link, users are able to change their information and account features such as password settings.

Add/View FAQ

This setting allows users to add and read Frequently Asked Questions (FAQ) posted on the site. Currently, FAQ is setup only for registered users to view and edit. FAQ's are being developed and DEQ welcomes any postings relating to the database or water quality monitoring.



To submit a posting, simply answer the questions on the FAQ page and click **Submit Question**. DEQ will review the question and post a response as soon as possible. To read posted FAQ's, click on the hyperlink **FAQ Index** found below the **Submit Question** button on the Add FAQ page.

Members List

This feature allows users to see who else is online. Currently, the feature allowing users to E-mail each other is disabled.

Add Web Links

This screen allows users to submit web links for other users to access. All submitted web links are reviewed by DEQ prior to posting on the site and reserves the right to turn down any submitted links.

To view links, click on one of the search terms found at the top of the **Add Links** page. Links are organized by categories. If a user wishes to suggest a needed category, please contact DEQ using the **Helpdesk** feature found on the left hand side of the webpage (instructions below).

Help Desk

On the left hand side of the webpage is a link for the database **Help Desk**. By clicking on this link, registered users can add new help desk tickets to notify DEQ of bugs or potential areas for improvement. By clicking on New Ticket found at the top of the Help Desk page, users can submit a new ticket. To submit a ticket, simply fill in each field as best as possible and click the **Submit** button found on the page.

Note: The helpdesk feature is currently not functioning correctly causing users not to see the right page. As a temporary fix, click on the 'New Ticket' feature and on the address bar on your web browser and delete the text **amp;** found near the end of the web address.

Account Deletion

At the bottom of the homepage is a section titled **Account deletion**. If a user wishes to have their account deleted, click the **OK** button found at the bottom of the page. Users must confirm that they wish to delete their account by entering their password. An E-mail will be sent to the address displayed on the page confirming that the account has been deleted.